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AVIATION AND AIRCRAFT JOURNAL



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VOLUME IX
Number 9

SPECIAL FEATURES

THE SPERRY MESSENGER AIRPLANE
A GERMAN DIESEL AIRPLANE ENGINE
THE NEW HANDLEY PAGE WING
U. S. ARMY AIR SERVICE
TESTS OF AEROMARINE WING STRUCTURE

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NOVEMBER 15, 1920

AVIATION AND AIRCRAFT JOURNAL

Member of the Audit Bureau of Circulations

VOL. IX, NO. 9

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Sea Gulls with C-6 Motors

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CURTISS AEROPLANE & MOTOR CORPORATION

GARDEN CITY, LONG ISLAND, N. Y.



AVIATION AND AIRCRAFT JOURNAL

Vol. IX

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No. 9

The Army Experimental Station

THAT another year will see McCook Field at some other place than Dayton is inevitable as the lease on the property now engaged expires next summer and there is no probability of its renewal.

The aeronautics industry generally will be glad if the engineering branch of the Air Service can have a location that is more amenable than Dayton. The time and expense of long journeys made frequently in becoming a service matter and a great relief will be felt if a more convenient site is selected for the new field.

The officers detailed to this most important work of the air service should be aware of the necessity of producers of airplanes and also secure Washington so that closer contact could be had at less inconvenience. A location between New York and Washington, which would combine both land and water stations would be a great advantage.

Congress will probably be exceptionally critical of expenditures for next year, but the urgency of the establishment of a permanent engineering station will be obvious that it will be one of the items that is certain to be allowed.

McCook Field as a flying field for experimental types of airplanes has been absolutely unsuited for that purpose. Its surroundings are so dangerous in the event of forced landings or successful take-offs that Congress will be loath to enter on any ground but those if they are not given a field where all kinds of tests can be made with the minimum of danger.

Persons interested in the future of our Air Service should use every opportunity to acquaint the country with the immediate need of a military station for accelerated engineering development.

Interest in Aerodynamic Research

THE designer's interest in aerodynamic research seems to vary year by year. At certain periods of aeronautical progress, he comes to the conclusion that the wind tunnel has given him all the help he needs, that wing sections have attained their maximum efficiency, that stability is but a question of repeated proportions, that the only aerodynamic progress possible is in the best degree of streamlines, to attain which he goes as far as a guide as any wind-tunnel data. Then, the adoption of an entirely new principle seems to answer to the highest possible degree.

Now, at the present moment, the introduction of the extremely broad monoplane has brought forward a whole series of aerodynamic problems. To begin with it is essential to derive thick wing sections, of sufficient camber to provide ample camber strength, with a high lift coefficient to cut down the required area, yet having a reasonable efficiency. Then, with a monoplane the chord is of necessity larger than in a biplane, maneuverability and stability require that the thick wing have if possible a smaller travel of the center of pressure. This is

quite sufficient to require lengthy research, but there are still other problems.

For anything like a large machine, of the wing is to have sufficient strength at the root of the camber, there must be either various sections from root to tip, or variation in plan form and front elevation, with a smaller cross section towards out. If the number of possible sections is large, the number of variations on these lines is beyond computation, and it seems very doubtful whether one can make a report that the characteristics can be safely deduced from the test of the original aerodynamic section. The few general rules published heretofore are scarcely reliable. There is a very large field to work in, and results to be obtained which every designer will watch with great interest.

Diesel Type Engines for Airplanes

FOR years engineers have been doubtfully regarding into the possibility of fitting a Diesel type engine in light automotive practice, but have been deterred from serious consideration of the possibilities by fear of excessive weight and size. It is very interesting to hear therefore that a German engineer has developed a two-stroke, six-cylinder engine, with compression somewhat on Diesel lines, but being injected into the cylinder where the air pressure is 200 lb. per sq. in., although there is an injection system which the Diesel system does not have.

The engine is said to be very light and efficient, while the absence of a combustion and the possibility of using low grade fuel render it very interesting from an automotive point of view.

Engineers will remain doubtful as to the possibility of using such an engine for aircraft, but it certainly offers important advantages as compared with the conventional internal combustion engine.

Speeding Airships

THE Goodyear Ferry Blimp when first exhibited created a very favorable impression but doubts were raised as to the possibility of its commercial utilization. It is gratifying to know that equipped with a 60-horsepower Lawrence motor, the pony blimp is doing useful service as a passenger carrier between Los Angeles and Avalon on Catalina Island.

That the small type of speeding airship has a definite field, is also indicated by the fact that one of the best French airship companies, the Zedel, has recently brought out a very similar machine to the pony blimp. This is a small airship of 1800 cubic meters, provided with a 50-horsepower Gnome or Rhône engine with a well streamlined nacelle with pilot and passenger in an enclosed cabin.

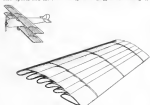
is that the two Duesen run on crude oil. The aircraft engine developed by Prof. Junkers differs from the big Duesen in that it possesses an exhaust system. In the big engine the air is compressed to 400 or 700 lb. or more, which renders it so enormously hot that the fuel taken for the instant it is injected but with an aircraft engine such extreme pressures are out of the question, although the compression pressure need not be more than twice that required in the usual engine.

The landing effort is not great enough to cause rupture of the fuel, therefore magnets and spark plugs are fitted. The engine as it stands is hardly suitable for gyroplanes or motor boats for the reason that its construction is too expensive and it cannot be described as well as the ordinary type but it may be possible to overcome these difficulties. The same principles naturally apply to the possibility of its use in the airplane.

The New Handier Page Wing

This is a statement regarding the Handier Page wing issued from the Handier Page Co. and published recently. It is not possible to see at the moment what are the conditions under which the wing is used.

The design of aircraft has, from the very commencement, been associated with the problem of safety in rising from and alighting on the ground. Anything which tends to promote air speed, and therefore safety in landing, is necessarily so.



THE HANDIER PAGE WING

the good of aviation. Technically, too, the high speed which an airplane can reach in the air is indirectly connected with the landing speed.

The special feature of the new Handier Page wing is, then, to do so, landing speeds far slower than those obtained up to the present will be possible, so, moreover, greater loads can be carried or higher speeds obtained with the same horsepower. Another special feature of the Handier Page wing is that it has very much greater lift for every square foot of its surface compared with an ordinary wing and this is accomplished by means of a most simple wing construction, which first of all would seem to reduce rather than increase the lift of the wing. The construction consists in having slots fitted through the plane, connecting the lower and the upper surfaces, and to the undercarriage. It would appear that these slots, allowing the air to escape from the under to the upper surface of the wing, take away all the lift. Strange as it may seem, the reverse is exactly the case. The slots in the wing actually convert a single wing into a number of wings, and increase the lifting power of the wing two or three times as much as in the ordinary construction.

Supposing, for instance, that a machine today lifts a total weight of a ton, and a half ton more of its own weight. With the new construction it will be possible to lift the same weight with a wing area of only 250 to 350 sq. ft. In consequence, owing to the new construction, the wing can be built much more strongly without increasing the weight, and as all metal wings become much more possible commercially.

Beyond this is the further and most important feature. With the high-lift capacity of these wings it is possible to fly more efficiently at all speeds. Thus new wings at all speeds will be much more efficient and will have more lift, so that the lift is obtained with much less horsepower to drive the machines through the air. Up to the present it has not been possible to design machines lightly enough to fly at all speeds, and this, because it would have meant the commercially impossible landing speeds of 70 to 90 miles an hour. Now, however, with the new construction, landing speeds smaller than these are not only possible but have been obtained, with all the advantages described above.

It is from a fundamental aviation task as this that progress in aircraft will be made. First comes the improvement in basic principle, and the adaptation to engineering design, and lastly operation in service at a decreased cost and with increased reliability in the public. Time must elapse before the public will benefit from these advantages. Minor expedients may be necessary for their full advantage to be gained but there is no doubt that it is an advance such as these that the whole future of aircraft development depends.

In viewing today the airplane fitted with an early type of this lift it is possible to see the beginning of the practical accomplishment in flying of what laboratory tests have shown can be readily accomplished.

Meteorological Reports Reveal Curious Facts

Flocks at Black Field, Riverside, Cal., are taking considerable interest in the meteorological reports compiled and posted twice daily in the school building, says *The Fly List*. The meteorological station installed and operated by Signal Corps personnel is receiving many interesting facts. Last November here somewhat unusual cold showers of sleet and atmospheric conditions about Black Field.

Signal Corps has reported that it required more snow flying time to reach Blackwell Field, San Diego, than it did to return from that base in this season. They could not understand this when the popular opinion prevailed that when flying north there always had a wing as there had. Good observations were made on that belief but reports posted by the meteorological report indicate that at various altitudes the wind direction is changed.

Readings are taken twice daily from a small negative balloon and instruments which record altitude, direction, velocity, temperature and relative humidity. Corp. James H. Keane is in charge of the station and also reports. Readings are taken twice daily and are taken at 8 a. m., and those following at 1:30 p. m. Observations clearly the variations at various altitudes.

A.M. Report			P.M. Report		
Altitude	Direction	Velocity	Altitude	Direction	Velocity
1000	100	10	1000	100	10
2000	100	10	2000	100	10
3000	100	10	3000	100	10
4000	100	10	4000	100	10
5000	100	10	5000	100	10
6000	100	10	6000	100	10
7000	100	10	7000	100	10
8000	100	10	8000	100	10
9000	100	10	9000	100	10
10000	100	10	10000	100	10
11000	100	10	11000	100	10
12000	100	10	12000	100	10
13000	100	10	13000	100	10
14000	100	10	14000	100	10
15000	100	10	15000	100	10
16000	100	10	16000	100	10
17000	100	10	17000	100	10
18000	100	10	18000	100	10
19000	100	10	19000	100	10
20000	100	10	20000	100	10
21000	100	10	21000	100	10
22000	100	10	22000	100	10
23000	100	10	23000	100	10
24000	100	10	24000	100	10
25000	100	10	25000	100	10
26000	100	10	26000	100	10
27000	100	10	27000	100	10
28000	100	10	28000	100	10
29000	100	10	29000	100	10
30000	100	10	30000	100	10

Temperature 45 F. Relative humidity 55 per cent. Pressure 1015.0 mbars. Wind 10 mph.

Mexican Officials Given Flight

Recently an official visit was made to Fort Dix by several Customs and Consular officials of Juarez. At the Post Commandant request, four of the visitors were taken up for flight before fifty-five minutes. General Fox, commanding the Juarez station, was present to lead the visitors. The visitors, speaking an altitude of 5,000 feet, and all expressed themselves as having had a most enjoyable flight.

U. S. Army Air Service

CHIEF OF AIR SERVICE

With rank of Major General

Member, Charles T. ... July 1, 1928

ASSISTANT TO THE CHIEF OF AIR SERVICE

With rank of Brigadier General

Michell, William ... July 1, 1928

Colonels

Michell, Charles O. ... July 1, 1928

Michell, William ... July 1, 1928

Lieutenants Colonels

Charles, Charles D. ... May 25, 1917

Fisher, James E. ... July 1, 1928

Palmer, Charles C. ... July 1, 1928

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Air Service officer, Capt. E. A. Radin.

Eighty Corps Area—Includes the States of Texas, Oklahoma, Colorado, New Mexico and Arizona, headquarters Ft. Ben Harrison, San Antonio, Tex. (For the purpose of administrative and tactical instruction with the Service with the Border Patrol and third operations incident thereto, such part of the State of Arizona as lies west of the 114 deg meridian and south of the 35 deg parallel is attached to the Ninth Corps Area.)

Commander, Maj. Gen. Joseph E. DeRamus.

Air Service officer, Maj. Henry C. Post.

South Coast Air District—Includes the Pacific Coast Air District, the South Coast Air District, the States of Washington, Oregon, Idaho, Montana, Wyoming, Utah, Nevada and California, headquarters, Portland, Ore. (For the purpose of administrative and tactical instruction with the Service with the Territory of Alaska is attached to the Ninth Corps Area for administrative purposes.) (For the purpose of administrative and tactical instruction with the Service with the Territory of Alaska is attached to the Ninth Corps Area for administrative purposes.)

Commander, Maj. Gen. Joseph E. DeRamus.

Air Service officer, Capt. Henry H. Arnold.

The Hawaiian Department—Includes the Hawaiian Islands and their dependencies, headquarters, Honolulu, Hawaii.

Commander, Maj. Gen. Joseph E. DeRamus.

Air Service officer, Maj. John F. Curry.

The Philippine Department—Includes all of the Philippine Archipelago and groups in China, headquarters, Manila, P. I.

Commander, Maj. Gen. Joseph E. DeRamus.

The Panama Canal Department—Includes the entire Canal Zone, headquarters, Quarry Heights, Balboa Heights, Canal Zone.

Commander, Brig. Gen. Chase W. Kennedy.

Air Service officer, Capt. Edward F. Hansen, jr.

Locations of Air Service Units

Wings

1st (Headquarters) ... Kelly Field, Tex.

2d (Headquarters) ... Langley Field, Hampton, Va.

Groups

1st Det Bombardier Group, Headquarters, Kelly Field, Tex.

2nd Det Bombardier Group, Headquarters, Kelly Field, Tex.

3rd Det Bombardier Group, Headquarters, Kelly Field, Tex.

4th Det Bombardier Group, Headquarters, Kelly Field, Tex.

5th Det Bombardier Group, Headquarters, Kelly Field, Tex.

6th Det Bombardier Group, Headquarters, Kelly Field, Tex.

7th Det Bombardier Group, Headquarters, Kelly Field, Tex.

8th Det Bombardier Group, Headquarters, Kelly Field, Tex.

9th Det Bombardier Group, Headquarters, Kelly Field, Tex.

10th Det Bombardier Group, Headquarters, Kelly Field, Tex.

speed of 16 meters per sec. The speed of the air was measured at twenty points on the circle relative to the blade. Fig. 2 was thus obtained.

It will be seen as the blade passes, the speed of air increases rapidly from the channel speed of 16 meters per sec. to just over 21 meters per sec. and then steadily diminishes to the channel speed slightly before the blade completes the revolution.

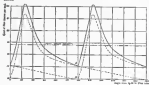


Fig. 2

It is clear, therefore, from this experiment that, in this case at least, the blade is not affected by its inflow. Fig. 3 shows that the blade is always attacking air, the actual velocity of which is the speed of translation only. In Fig. 3 two curves similar to those in Fig. 2 have been superimposed but displaced by 180 deg. This gives an approximation to the variation of speed at a given point behind a two-bladed propeller. Figs. 4 and 5 show the same for a three- and four-bladed propeller.

In the case of a two-bladed propeller it will be seen that each blade is striking air having an actual speed equal to the speed of translation plus a small amount. If of the inflow on the previous blade. This amount, for convenience, is called the interference flow.

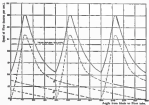


Fig. 4

the interference flow. In the case of the three blades each blade attacks air having a velocity equal to the speed of translation plus the interference flow CD and CE from the previous prop blade.

Similarly with the four blades, any one blade is influenced by the inflow set up by the previous blades, but not by the inflow caused by itself.

In each of the figures the dotted curves show the flow caused by each blade separately and the full curves give the resultant speed variation at the point of measurement. The latter curve is only approximate since the interference flow will have a secondary effect on the inflow and outflow. The chain line gives the average speed, and since the point of measurement

was only 0.25 D between the plane of rotation, this speed may be considered approximately as the inflow speed.

It is not possible, of course, from this particular experiment to state as a general law the portion of the inflow which should be added to the speed of translation in order to give the true actual speed of air which the blade is attacking. The experiment suggests, however, the fraction cannot be taken as a constant but may vary with other factors such as the number and width of blades.

In the following table the interference flow is shown in column 3 as a fraction of the average inflow velocity, and if we assume that the mean inflow velocity is half the mean

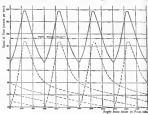


Fig. 5

inflow velocity then column 3 shows the interference flow as a fraction of the outflow.

2 No. of Blades	3 Interference Flow Mean Inflow	4 Interference Flow Mean Outflow
2	0.04	0.04
3	0.10	0.06
4	0.16	0.08
5	0.22	0.10

In Fig. 5 the values in column 3 are plotted against the number of blades geometrically similar blades.

These values need checking by further experiment before their quantitative value can be entirely accepted. They are

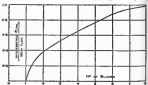


Fig. 6

however, significant, and show light on what has for some time been a subject of controversy.

They indicate that:

(1) The interference that a propeller blade is influenced by its own inflow is enormous.

(2) The propeller as a whole is, however, affected by the inflow, but that is due to blade interference.

(3) With a small ratio of total blade width to diameter the simple Drucewicz is approximately correct, while with a large ratio the inflow theory with the inflow factor of 0.5 is correct. For propellers normally in use a compromise depending on the ratio is justified.

Three recent experiments of Drucewicz also give weight to the idea. (Hansen suggested but only recently experimentally tested by H. M. Wood at the Royal Aircraft Factory) that corresponding blade elements of successive blades in a propeller were equivalent to an infinite multiplicity with a back-wind stagger and that blade interference might be corrected for by testing an aerial on one of such a multiplicity series.—The Aeronautical Journal.

Army Air Service Personnel

Recent assignments of Army Air Service personnel include the following: Lieut. Col. James H. Polak has been detailed as Chief of Training and Operations Group, new Brig. Gen. William Mitchell appointed assistant chief of Air Service. Major John D. Kewell has been detailed as assistant to chief

Procurement Division; acting chief, Production Section; acting chief, Inspection Section, Supply Group.

Major Earl B. Lueders and John W. Hanna, Jr., Capt. Maxwell Kirby, members and Lieut. Robert V. Hopkins, members, composed a new board which will consider applications for appointment on the Aviation Section, Signal Officer's Reserve Corps, following the board which was appointed April 18, 1928.

Capt. Lloyd M. Kewell has been assigned as education and membership officer for the Air Service, Washington, D. C. Capt. Frederick F. Christie has been appointed transportation officer of the office of chief of Air Service, retaining Lieut. Col. Hargreaves, transferred, Capt. James P. Hobery and Ralph F. Counts have been assigned to the Air Service Advisory Board.

Recent assignments to groups, office of Chief of Air Service, are as follows: Training and Operations, Capt. Henry Albery, Jr., Lieut. James D. Curdell, William E. Connolly, George N. Goshard, Clifford E. Smythe; Administration, Lieut. Harman N. Brown, Lieut. James E. Dahn, Jr., Hugh C. Dorey, Kenneth C. McGregor, Harold Lee George.

A Variable Surface Airplane

The accompanying illustration shows an extremely interesting French machine, with variable wing, recently flown before the French Technical Section at Reims.

The machine has its upper plane in three parts, one of which forms part of a fixed keel plane, while the other two are movable, one sliding forward and the other backward.

Constructional details are not available at the moment, and it would be interesting to know the way in which loads are

enabled the pilot to vary the wing surface from thirty to fifty square meters and alter his speed from 60 to 200 kilometers an hour. The surface variation is made in the upper plane, which is constructed in three parts. One of these is fixed, but the two others are movable, one gliding forward and the other backward. The center of pressure is kept constant by giving the forward and rear wings a different displacement.

The pilot, starting out with the wings at full stretch rear



(1) Lieut. Polak Seen Before

A VARIABLE SURFACE AIRPLANE

mounted from the movable plane when extended to the keel plane. No doubt the cambered supports shown in the photograph assist in this transference of stress.

The chord of the upper plane is 5 ft. 4 in. when reared, and 25 ft. 6 in. when the movable surfaces are displaced. The center of pressure remains constant unchanged by having one movable part moved forward and the other rearward.

The speed range is from 125 miles to 27 miles an hour. A perfect landing was made on test, with a landing run of only 125 feet.

The plane was designed by Leroy and Guéhenne and flown by the aviator Guéhenne, after whose demonstration of the power it was officially accepted by the commission.

The machine is a 250 hp. biplane of which a new mechanism

in a considerable height. Then wishing to increase his speed he began contracting the wing's surface. The operation took about a minute, during which time the plane gathered speed until it was flying at 200 kilometers an hour.

When he wished to land, the pilot again increased the surface and glided down gently at 60 kilometers an hour and made a perfect landing. The arrangement of the rear wing of the upper plane enables the pilot, at the same time as to extend it, to alter the angle of incidence.

Military experts who saw the exhibition declare themselves well satisfied that a great step is made by the invention toward securing safety of landing of an airplane which can, at the same time, be capable of great speed. The mechanism is claimed to be both simple and strong and the trials carried out did not develop any faults.

Annual Meeting of the Aero Club of America

The seventh annual meeting of the Aero Club of America took place at the club headquarters, 112 East 43rd street, New York, on November 5. Three hundred and eighty-five members of the club were present in person or by proxy. The meeting was held in the dining room, and which was filled by the seventy members who were present in person.

The meeting was opened by Charles Jerome Edwards, the first vice-president, in the absence of the president who was detained. Jefferson DeHart Thompson, the president later took the chair. The first in the order of business was the reading of the minutes of the by-laws relating the meeting and the address of the secretary concerning the meeting of the prescribed section. The minutes of the last annual meeting and of the special meeting of August 10 were read and approved. The press committee made its report which was approved.

The new business consisted of a set of amendments to the by-laws which were presented by Prof. Charles Lane Post. For the most part they consisted in changes of phraseology and were intended to bring the by-laws in harmony with the changes made by the association with the American Flying Club and to remove any of the specific provisions of the special meeting in August.

Two sections of the by-laws were somewhat radically changed. The first provided for an increase in the number of governors from five to seven. The intention is to allow more sections of the country to be represented on the board of governors. Some discussion related on this point. The question was expressed that other sections of the country believed that the Aero Club of America was attempting to concentrate aviation in New York. Other speakers said that the real and original function of the club was to represent the entire United States, as is indicated in the name.

The second radical change consisted of a complete change of the chapter of the by-laws relating to discipline. The changes were discussed at the meeting in August but could not be incorporated at that time owing to the sections of the by-laws relating to the membership of members. The chapter is amended made as follows:

"Section 1. At any regular or special meeting of the board of governors, by a vote of three-fourths of the governors present at such meeting, any member, except when charges have been made, may be suspended or expelled from the club for any cause considered, in the judgment of the board, as being inimical to the welfare or best interests of the club provided, however, that a copy of the charges shall have been mailed to the address of such member at least ten days prior to the date of the meeting, and that, at such meeting, he be given an opportunity to be heard thereon."

"Sec. 2. At any regular or special meeting of the board of governors, by a majority vote of the members of the committee, any member of the club may be suspended from any or all privileges of the club for a period not exceeding six months for any infraction of the house rules or for conduct, within the club house, deemed inimical to the welfare or best interests of the club; provided, however, that a copy of the charges against such member be mailed to his address as it appears upon the records of the club at least five days prior to the meeting of the committee, and that at such meeting, such member shall be given an opportunity to be heard thereon."

A further section of the amendments that was considered was, was the section relating to the election of the officers. The objection raised was that the members of the club had no direct vote in the election. Mr. Miller made a plea for the support of the club in the governors that they elected.

The principal change involved in the addition of provisions regarding that the person under charges be sent a copy of the charges and that he be given a hearing at the meeting at which his case is taken up.

The amendments were voted on as a whole and were passed by a large majority.

After the vote were closed, the lecture reported that the following members were elected governors:

Governors, Term expiring November, 1919.—William W. Miller, Douglas Charles Lane Post, Henry A. Wise, Wm. J. James J. Rice, Jr., Jefferson DeHart Thompson, and W. Belmont Cross.

Governors, Term expiring November, 1920.—Cortland F. Bang, Benjamin F. Condit, Fred C. Condit, Colin S. Pratt, Arthur A. O'Brien and William A. Lacey.

Governors, Term expiring November, 1921.—Douglas Campbell, Maurice H. Chase, Philip J. Roosevelt, Clinton Jerome Edwards, T. Traylor Davidson and Charles E. Miller.

Governors, Class B.—Loris D. Donaghy, Godfrey L. Cook, Howard E. Gales, Beaumont Gossell, Ross-Admiral H. A. Fink, U.S.N., Charles J. Hinkle, Albert J. Lambert, George S. Myers and Eugene S. Smith.

After the announcement of the election the various reports of the club presented their annual reports. Each of these reports caused some discussion. The general tone of the speech was an expression of a moral desire to make the Aero Club of America a big force in aviation and for the members to work in harmony to achieve this end.

The election of the officers for the coming year did not take place immediately after the meeting as formerly but will take place at the next session. This change was brought about by one of the amendments to the by-laws passed at the meeting.

Lincoln Standard Carries Six

Establishing a new short flight passenger airplane record for California, Pilot Michael Brown, chief instructor of the Varsity Flying School at Redwood City, took five passengers, which resulted weight with his crew was 975 pounds, on a flight over Redwood.

In five minutes Brown reached an altitude of 3000 feet, landing and landing his machine with the wind at an altitude of 700 feet.

The plane used was a Varsity Lincoln Standard, prepared by Walter T. Vauxey for the record trip. Brown was one of the first civilian instructors to enter the government service during the war at Rockwell Field, San Diego.

Here is a list of the passengers and their weights:

E. Jackson, 115 pounds.

H. Brown, 160 pounds.

Lambert H. Dicks, 155 pounds.

V. Ryan, 235 pounds.

W. B. Sawyer, 160 pounds.

C. Swinton, 165 pounds.

Total, 975 pounds.

In addition to the pilot and passengers, the plane carried fifteen gallons of gas, weighing ninety pounds, and five gallons oil.

Gomara Company Record

The Gomara Flight (Term) for September 10, given a record of the month achieved by the Gomara Leiftrichers this company, started in May, 1918, by the Allgonese Electrolite Co. with a capital of 2,000,000 marks, has the following equipment: 40 postal machines, 50 airplanes, 10 boats (available for building) and 2 lighter men.

The total flights made since the formation amounts to 5,300 with a total of \$18,000 miles covered.

This company expects to operate in the near future, the Commercial branch of the Gomara-Wing with head office at Copenhagen, Munich, Wasmersdorf, Hamburg, Bremen, Amsterdam and London.

Makes Fast Time

Traveling in a new flying boat, which he had just purchased in the country, Col. W. G. Bechen, V. C., made a fast trip from Albany to Montreal on October 2. His route the distance of approximately 250 miles in two hours and five minutes.

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Seattle-Victoria Air Mail in Operation

The contract awarded by the Post Office Department to Edward Hubbard, formerly of the Boeing Airplane Co., is being carried out. The contract called for a maximum of ten flights a month. As the operation of the service began on October 10, only five trips were made. Hubbard is using two Boeing machines, one twin four engine equipped with a floatplane, and a flying boat equipped with a floatplane. He uses the machine which is suited to the land as that particular trip, keeping the other machine in reserve. The American terminals is the Boeing hangar on Lake Union. The service is paid for entirely by the United States government, the Canadian Post Office taking no part. Hubbard is required to deliver the mail to the steamer at Victoria but the air authorities have promised to provide a proper float.

All of the trips in October were made in bad weather, some of them after dark. The mail in this portion has been advanced at least 24 hours. In the case of letters mailed after the regular service by train or steamer has left, they are advanced at least two weeks to the United States, as otherwise they would have to wait for the next steamer.

The Boeing Airplane Co. is concerned, in connection with the start of this service, that they have gained from the commercial operation of airplanes and will in the future realize their activities to manufacturers.

San Diego May Have Aerial Mail

With a view to establishing direct mail service between San Diego and New York, John A. Jordan, chief of construction of United States express mail service, is investigating the San Diego route. The service, if found feasible by Jordan, will be a 50-hour service between San Diego and New York and will be by way of an air route from San Diego to the international mail terminal at San Francisco. He is conducting the investigation under the direction of the postoffice department.

The commercial flying field at Dulles and landing facilities there were looked into by Jordan. He said that he was there to investigate the physical factors of the proposed route and to report to Washington. Then, according to Jordan, it will be up to the congressmen from there, the chairman of commerce and the cabinet to bring pressure to bear to secure the service. He said he thought San Diego could get it if those representatives speak right up.

The aerial mail service so far has been unsatisfactory, Jordan says, and an average of 34 percent perfect was maintained last year, although much of the flying was around the great lakes, where conditions are bad.

F-5L at the Smithsonian Institution

The Navy Department has loaned a completely equipped F-5L flying boat to the Smithsonian Institution for exhibition purposes. This aircraft has been sent away in such a manner as to enable those viewing it to understand clearly all its details in connection with its construction, assembly and operation. Shipment was made by truck from the Washington Navy Yard to the Smithsonian Institution, and the boat was assembled by personnel from the U. S. Naval Air Station, Annapolis, D. C.

This type of flying boat is one of the most interesting and instructive which could have been placed on exhibition. Some of the greatest achievements of American Naval Aviation have been realized with this type of craft.

Enlisted Men as Flying Cadets

Due to complaints from primary flying schools that men have been recruited in the selection of enlisted men for detail at these schools as flying cadets, Air Service headquarters has asked attention of commanding officers to the fact that the men selected should be potential officers of the Air Service. The selection of men who do not measure up to this standard and who are later sent to flying schools mostly results in their failure. These failures result in unnecessary expense to the Government and have an adverse effect upon the working staff of the schools to which they are sent.

An Exhibition at Los Angeles Bases

Arrangements were completed recently for an new exhibition under the auspices of the Aero Club of Southern California in connection with the national championship automobile races Thanksgiving Day at the Los Angeles Speedway. This is in addition to Ford's flying circus, already announced on the Speedway program by Manager Dick Ferris. The new exhibition will show the latest types of aircraft.

Several large airplanes of the several commercial designs, both for passenger and freight carrying, are being constructed in Los Angeles factories.

One, which is being rushed in order to be in the air by Thanksgiving Day, will carry a ton of freight on a flight of 1000 miles, and the Aero Club has promised Mr. Ferris that it will be entered. Another, which is expected to show a new mark in flying efficiency will be registered as an entry if the owner decides to retain it in Los Angeles.

The public will be admitted to the affairs of the Speedway from 8 to 1 o'clock. Facilities will be afforded for close examination of the new types of machines. The field will be closed at 1 o'clock for the flying circus, and the championship automobile races will begin at 2 o'clock.

San Francisco Naval Base to Be Inspected from Air

Inspection from the air of naval base sites on San Francisco bay is contemplated by the naval base committee of the Oakland, Calif., Chamber of Commerce for the congressional conference that opens on November 16.

The Naval Base have arranged on an air trip, which will enter the bay at Alameda, Hunter's point, and Sausalito, and then in forty-five minutes, and Major Reed Chambers, manager of the Dunsmuir Aircraft Corporation, has invited W. W. Chubb, chairman of the committee, and J. R. Kowland, a member of the committee on arrangements, to take a test flight.

Major Chubb has proposed that as many as possible of the visitors and representatives be induced to take the trip and has given assurances that with an air "stage" which his company will have about the first of the month, the entire party of ten can be shown all of the sites in an hour and a half.

"I have already flown over the three sites," the major said today, "and am preparing to make some flights to take photographs. In any event, after viewing the sites from the air, there is nothing to it but Alameda."

Appointments of Army Flying Cadets

Pending the publication of regulations, governing appointments in the Officers' Reserve Corps, the War Department has stated a policy which is to be observed relative to the appointment of flying cadets in the Reserve Corps. About one month prior to completion of training, cadets will be examined as to their fitness for appointment in the Reserve Corps by a board of three officers, one of whom will be a medical officer convened by the commanding officer of a flying field. Reports from the various boards, whether favorable or unfavorable to the cadet, will be forwarded through the Chief of Air Service to the War Department. Appointments in the Officers' Reserve Corps will be made in sufficient time so that the cadets may receive such appointments on the date of completion of their flying training. Cadets who are under twenty-one years of age at completion of training will be appointed on probation that age.

M. R. Sandherr Visits This Country

M. Raymond Sandherr, Chairman of the Legion of Honor, and president of the Societe Maritime Francaise de France arrived in the United States on November 1. The purpose of his trip is to complete the regulations for the nomination of Marine Gunners' cadets in this country. The Marine Sandherr firm is one of the large airplane manufacturers in France and has gone ahead with the production of aerial boats. The aviator Ernest recently flew a Morane Sacland type with the elevator and screen controls locked, using only the rudder and ailerons.

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